

February 14, 2003

Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street, SW
Washington, D.C. 20554

**Re: *Ex Parte*
 CC Docket Nos. 01-338, 96-98, and 98-147**

Dear Ms. Dortch:

Yesterday, the undersigned representative from BiznessOnline.Com met with Commissioner Kevin Martin's legal advisor Dan Gonzalez. Attached for inclusion in the record of the above-captioned proceedings pursuant to 47 C.F.R. § 1.1206(b) is a White Paper provided to Mr. Gonzalez yesterday. The document addresses the operational and economic impairments facing a carrier seeking to use competitive switching to serve mass-market small business and residential customers.

Sincerely,


Ron Gavillet

cc: Dan Gonzalez
 Qualex International

IMPAIRMENT AND UNBUNDLED SWITCHING

In order “[t]o access an unbundled local loop’s theoretical capability of providing a telecommunications service” a competitive carrier “must, as a practical, economic, and operational matter, be able to switch or route traffic to or from that loop.”¹ In this respect, the “impairment” suffered by competitive carriers that seek to use their own (or use other non-incumbent) switches to serve residential and small business customers flows directly from the incumbent LEC’s natural monopoly position that the D.C. Circuit directed the Commission to assess in *USTA*. As discussed below, the evidence demonstrates that, in general, competitive carriers seeking to self-deploy switching face severe cost disadvantages that stem from the fact that: (1) the incumbents’ networks rely on ubiquitous loops that competitive carriers cannot replicate, and (2) the incumbents are the only carriers that, due to their prior monopoly franchises, could place switches at the terminus of each loop. Because of these fundamental facts, competitive carriers seeking to offer mass market telecommunications services using their own switches must incur substantial costs that incumbents do not face, which constitutes a classic entry barrier. Although a competitive carrier may rely on fewer and larger switches, this potential is generally insufficient to offset the substantial costs the new entrant must incur to extend its customers’ loops from the incumbent LEC’s local serving office (“LSO”) where those loops terminate to a distant location where the competitor’s switch is located. In addition, in order to access their customers’ loops, competitive carriers must have the incumbent physically move each individual loop from the incumbent’s network to the competitor’s facilities, a process known as the “hot cut.”

Competitive carriers have provided overwhelming evidence that, at least as a general matter, each of these impediments places them at a very significant competitive disadvantage and, in combination, almost totally forecloses competitive carriers from competing for residential and small business customers using their own or third party switches. However, in light of the D.C. Circuit’s suggestion that unbundling decisions should, where possible, be based on a review of the facts applicable to “particular markets,” the Commission should at most establish rebuttable presumptions regarding the presence or absence of impairment in certain specific circumstances and, consistent with recent proposals from NARUC,² leave to the State commissions the market-specific determinations as to whether entrants are impaired without access to cost-based local switching in their jurisdictions, subject to the consideration of at least the factors specified below. In the interim, however, and especially in light of the general evidence of impairment established on the record, the Commission should invoke its authority to establish transitional rules that prevent market disruption for both competitors and customers to the extent it adopts any rebuttable presumptions or otherwise limits the availability of local switching. This will ensure that local switching remains available as an unbundled network

¹ *Collocation Remand Order* ¶ 46, *aff’d*, *Verizon Telephone Cos. v. FCC*, 292 F.3d 903 (D.C. Cir. 2002) (recognizing that “switching and routing equipment activates th[e] capabilities of a loop that allow the loop to carry calls”)

² See 2/6/03 NARUC Ex Parte.

element until the States have acted to address the presumptions pursuant to the Commission's guidance.

A. General Impairment Analysis.

1. The Record Demonstrates That Competitive Carriers Suffer From Substantial Economic Impairments In Seeking To Self-Deploy Switching.

First and foremost, based on the record compiled here, virtually all of which is drawn from actual marketplace experiences since the *UNE Remand Order* was issued in 1999 (and thus after the record that was reviewed in *USTA*), the issue of whether switching is retained as an unbundled element should be based on a fundamental economic analysis of conditions likely experienced by a carrier in a particular LSO. The impairment inquiry should focus on cost disadvantages "linked (in some degree)" to "natural monopoly" characteristics of the local exchange network.³ The comments have identified from established economic theory and antitrust regulation three important barriers to the deployment of alternative facilities by competitive carriers: sunk costs, significant scale (and scope) economies, and other categories of costs that new entrants must incur but incumbents do not and that therefore constitute entry barriers that create a non-transitory cost disadvantage for entrants.⁴ The switching element exhibits each of these three characteristics.

The deployment of switching requires substantial sunk costs. To be sure, switching does not involve the same magnitude of sunk costs as transmission facilities, because theoretically a switch can be redeployed to another location if service in the first location turns out to be unprofitable. Nonetheless, a new entrant must incur substantial costs for the initial installation of a switch; as a result, at least 25 percent of switching investment is not recoverable if a carrier were to exit the market.⁵ In addition, the cost of each hot cut is also a sunk cost, because it is paid up front and is not recoverable upon exit.

Switching is also characterized by steep scale economies. Both the cost of the switch itself, as well as numerous items that support the switch (such as the cost of the building that houses the switch, the cost of power and air conditioning, and certain test equipment), are significant costs that do not vary appreciably with volume. The basic cost of much of the software used to operate the switch also does not vary with usage, and this can be a significant and recurring cost that exceeds the up-front cost over the life of the switch. As a result,

³ *United States Telecom Ass'n v. FCC*, 290 F.3d 415, 427 (D.C. Cir. 2002) ("*USTA*").

⁴ See generally See Robert D. Willig, "Determining 'Impairment' Using the *Horizontal Merger Guidelines* Entry Analysis" ("*Willig Guidelines Ex Parte*") (attached to 11/14/02 AT&T Ex Parte); Laurence Kotlikoff, Natural Monopoly and the Definition of "Impairment" ("*Kotlikoff Impairment Ex Parte*") (attached to 1/22/03 AT&T Ex Parte); 1/10/02 Ex Parte Letter from Judge Robert Bork to Chairman Michael Powell at 6-8 ("*Judge Bork Antitrust Ex Parte*"); 01/31/03 AT&T Ex Parte.

⁵ See Willig *Guidelines Ex Parte* at 17.

switching exhibits scale economies over the full range of demand, both under the assumption that the customer base is geographically diffuse or concentrated in particular “clusters.”⁶

But the third barrier to entry for switch-based service offered to mass-market customers, *i.e.*, the fact that use of competitive switching requires new entrants to incur very significant costs that incumbents do not, is particularly important. First, new entrants seeking to use their own switches must incur the costs associated with a hot cut, including both the charges assessed by the incumbent LEC and their own costs of managing and participating in the hot cut process. Moreover, such carriers must also incur significant and sunk costs in order to extend their customers’ loops from the incumbent’s LSO to the building where the competitor’s switch is located. These costs, which are sometimes collectively referred to as “backhaul” costs, are necessary because competitive local networks did not develop under a monopoly franchise. New entrants seeking to serve residential and small business customers can only expect to win relatively small numbers of customers in individual incumbent LEC LSOs. As a result, they are forced to increase the geographic scope of their switches by employing a different type of network architecture than incumbents.⁷ Rather than deploying numerous switches located in close proximity to customers, as incumbents do, competitive carriers typically must deploy a single switch that serves a much broader geographic area than an incumbent LEC’s switch. To accomplish this, a competitive carrier must deploy much longer “loops” than the incumbent. Indeed, competitors’ principal use of unbundled transport is not to connect their own switches to each other. Rather, what the incumbent LECs (and the Commission’s rules) call “transport” is really used to provide the loop extensions that competitors need to connect their customers with their switches. Thus, unlike the incumbent LECs, competitors need combinations of loops and transport facilities to connect their customers to their switches. This is the only way new entrants can achieve viable levels of switch utilization, and thus switching scale economies, anywhere comparable to those achieved by the incumbents.

In addition, the physics of the analog signals carried over copper-based loops – the most common means for connecting residential and small business customers to a network – limit the effective distance a customer may be located from a switch and still employ a copper-based loop. As a result, a competitor cannot use a geographically distant switch to serve its customers employing voice grade loops unless it also digitizes the signals carried over such loops. This requires the use of collocation and additional equipment that can digitize, concentrate and multiplex the signals on voice-grade loops onto transport facilities connected to the competitor’s switch. All these investments require substantial customer demand to minimize the disadvantage

⁶ AT&T, Clarke Dec., Exh. 1-10. The relative cost disparity is significant. For example, whether it is assumed that a competitive carrier has a 30 percent market share in each of the clusters served by the incumbent in a state, or that the competitive carrier wins all of the customers in 30 percent of the neighborhoods served by the incumbent in the state, the competitive carrier would be at approximately a 40 percent cost disadvantage in self-providing switching *vis-à-vis* the incumbent.

⁷ See generally 10/3/02 AT&T Ex Parte.

experienced in a particular wire center, and should the necessary minimum demand not materialize for the new entrant, much of the investment is sunk.⁸

The unavoidable need for competitors to incur these backhaul costs can place competitive carriers at a severe cost disadvantage relative to the incumbent. The incumbent can connect its copper loop directly to its switch by merely running a jumper wire across its main distribution frame in the central office for a monthly cost of well under a dollar. However, to connect a small customer's loop to its switch, a competitive carrier must first establish collocation, deploy transmission equipment to digitize and multiplex the loop, and establish a backhaul transport facility, after which it must order a hot cut and typically a number port. These are all additional, substantial costs that *only* the competitive carrier must incur to serve small customers, and these cost disadvantages result *solely* from the fact that the incumbent's network was deployed under a monopoly franchise as a closed network designed for use by a single carrier.⁹

Given this technical evidence, there is no basis for the incumbents' claim that "the need to backhaul traffic . . . is purely a function of a CLEC's ability and decision to deploy fewer switches with broader geographic scope and to use more transport to serve those fewer switches. . . . CLECs could deploy more switches, coincident with every incumbent LEC switch, and thus eliminate or substantially reduce the need for backhaul facilities."¹⁰ No new entrant will have the customer base to justify deploying the same number of switches as incumbents and certainly not in the requisite proximity of the loop's terminus. Even if it were theoretically possible to do so, which it is not, any competitive carrier that attempted to deploy a switch "coincident with every incumbent LEC switch" would find itself with massive overcapacity and unit costs that could not be sustained in the market. Accordingly, such investment would indeed be socially wasteful at best.

Several parties, including SBC, AT&T, and WorldCom, have submitted detailed analyses that quantify these cost disadvantages.¹¹ These various studies, taken together and analyzed properly, present a remarkably consistent picture of the substantial economic impairment requesting carriers would face if they were required to serve residential and small business customers with their own switches. AT&T has submitted two complementary analyses of the cost impairments that a new entrant would incur if it is not permitted to supply voice service to small customers' locations through the use of UNE-P but instead was required to use current manual technologies to collect unbundled incumbent LEC voice grade loops and then backhaul the customer loops to its switch location. Both of these studies examine in detail the entrant's

⁸ See 1/17/03 AT&T Ex Parte, Att. 2; 1/27/03 WorldCom Ex Parte at 9; 1/8/03 WorldCom Ex Parte at 4.

⁹ 1/17/03 AT&T Ex Parte, Att. 2; 1/8/03 WorldCom Ex Parte, Att. A; Willig *Guidelines* Ex Parte at 17-20.

¹⁰ SBC Reply at 138 (emphasis omitted).

¹¹ See generally 11/14/2002 SBC Ex Parte; 1/8/2003 WorldCom Ex Parte; 1/17/03 AT&T Ex parte.

costs for (i) hot cuts,¹² (ii) collocation, (iii) loop digitizing, concentration and multiplexing, and (iv) transport. These two studies, one examining the impact of a “hypothetical” new entrant and the other examining impact in each of more than 8,000 wire centers, provide persuasive evidence that competitive carriers suffer very significant impairments when they are forced to use current procedures to gain access to unbundled incumbent LEC loops.

The first AT&T analysis demonstrates that an entrant that obtains a very substantial (20%) market share in a relatively large incumbent LEC end office serving 15,000 lines (*i.e.*, the entrant wins 3,000 lines that terminate in the end office), faces collocation space preparation and rental costs of \$1.47/line, collocation equipment costs of \$4.68/line, net backhaul costs of \$0.55/line and hot cut costs of \$2.83/line – yielding a total net impairment relative to UNE-P of almost *ten dollars per line*. These cost impairment figures rise substantially if the competitive carrier collects fewer than 3,000 lines per end office (either because it gains less than a 20% share or because it tries to collect customers from end offices serving fewer than 15,000 lines). The net cost disadvantage drops somewhat as the individual competitive carrier serves larger numbers of customer lines in a single office, but even then the data show that the carrier remains at a potentially severe cost disadvantage with respect to serving low-end customers.

The second study, instead of examining a model competitive carrier, estimates “best case” impairment costs, on an office-by-office basis, if a competitive carrier served residential and small business POTS customer demand through current voice grade UNE-L technology. Specifically, rather than assuming that collocation space must be acquired exclusively to serve analog loops, it assumes that the competitive carrier always has other uses for collocation space (*e.g.*, private network equipment, access circuit terminating equipment) that are sufficient to pay for almost all of any remaining unused rack space in minimum-sized competitive carrier collocations. Second, it does not assume that self-provided interoffice (backhaul) circuits are

¹² It is also important to recognize that hot cut costs alone may constitute an economic impairment that prevents competitive carriers from offering a competitive local service to the mass market. The record demonstrates that the current charges for hot cuts in many states foreclose the use of a UNE-L entry strategy. *See, e.g.*, AT&T at 216, ASCENT at 36, GCI at 36; WorldCom at 86. Some incumbent LECs have claimed that the price of hot cuts has decreased in recent months. *See e.g.*, 12/23/02 Verizon Ex Parte at 1 (stating that hot cut rates average \$36 across Verizon’s territory). However, as other commenters explained, these decreases in hot cut prices may only provide temporary price relief. *See, e.g.*, 1/15/03 Broadview Ex Parte at 1-3 (noting that Verizon’s hot cut rates in many states, such as New York and New Jersey, are short-term “promotional” rates that are due to expire in about a year, and that Verizon contended that the price for hot cuts in these states was as high as \$185 each.) Accordingly, competitive carriers continue to face the regulatory risk of change in hot cut costs. Moreover, in addition to the high nonrecurring charges imposed by incumbent LECs, hot cuts also require considerable internal resources and expenditures on the part of the CLECs, which must also be borne by the competitive carrier alone. Finally, and whatever the precise level of hot cut costs, the costs associated with hot cuts are unlike those sustained by start-up firms in other industries. Competitive carriers alone incur these costs because of the unique design of the incumbents’ local exchange network.

used exclusively to connect analog loops to the competitive switch, but that the competitive carrier always has other demands for interoffice circuits (e.g., private network sales, access and trunk interconnection circuits) that are sufficient to pay for almost all of any remaining unused capacity in its self-provided backhaul facilities. And the study also uses wire center size and location-specific data to compute impairment costs specific to each of these wire centers, assuming that a particular share of each wire center's lines are served by the competitive carrier.

This study demonstrates that if a competitive carrier gains a 5% share of customer lines across the existing mix of all RBOC wire centers currently serving more than 5,000 customer lines, it can do so only by suffering a cost impairment of \$4.72/line for collocation and digitization/concentration equipment costs, \$0.84/line for backhaul costs, and \$2.44/line for hot cut costs. This results in a minimum expected impairment relative to UNE-P of \$8.01/line.¹³ Similar to the first study, this study shows that even if a competitive carrier obtains an extremely generous (and unlikely) 20% share of customer lines in each incumbent LEC end office, the minimum expected cost impairment drops only to \$6.84/line.

Other studies offered in the record provide similar figures. WorldCom, for example, provided a study that found substantial cost impairment in most incumbent LEC LSOs.¹⁴ And most notably, SBC's own data confirm these results. One of SBC's studies of the cost impairments associated with competitive carriers' access to unbundled incumbent LEC loops calculates that, using the current best procedures that SBC offers, competitive carriers will incur extra costs in the range of \$10 or more per line to serve analog line customers using unbundled SBC loops.¹⁵ These numerical cost impairment figures are generally consistent with the analyses submitted by AT&T and WorldCom.¹⁶

¹³ This study also estimates the cost offset arising from the fact that the competitive LEC employs 100% digital lines while incumbent LECs employ both analog and digital loops. That offset is calculated to be about \$0.60 per line per month, generating a net competitive carrier cost disadvantage of \$7.41 per line per month.

¹⁴ See generally 1/8/03 WorldCom Ex Parte ; 1/27/03 WorldCom Ex Parte.

¹⁵ See generally 1/14/03 SBC Ex Parte. SBC claims that its studies show that competitive carriers can profitably enter because existing retail rates provide a sufficient profit "margin." However, the Commission should refuse to make impairment determinations on the basis of this type of "margin" analysis. Rational entry decisions are based on an "assessment of the likely competitive responses of the incumbent firm(s) with which it will be competing. If the potential entrant knew that its costs were significantly higher than those of an incumbent, it could anticipate that the incumbent firm likely would respond to new entry by lowering prices to a point that is above the incumbent's costs, but below the new entrant." 1/27/03 WorldCom Ex Parte at 2. See also Willig *Guidelines* Ex Parte at 7; Bork *Antitrust* Ex Parte at 6. Indeed, assessing impairment on the basis of a margin analysis would be inconsistent with *USTA*, which held that "any cognizable competitive 'impairment' [is] necessarily . . . traceable to some kind of disparity in cost." *United States Telecom Ass'n v. FCC*, 290 F.3d 415, 426 (D.C. Cir. 2002).

¹⁶ See 2/04/03 AT&T Ex Parte.

The results of these various studies are highly consistent. To the extent that their results differ, it is due mostly to differences in certain assumptions relating to penetration rates, inputs for DLC costs, and collocation and backhaul “fill.” In addition, the cost impairments identified by these studies represent a very significant proportion of the total costs of providing POTS service.¹⁷ This evidence is clearly sufficient to support an interim ruling that, subject to review by State commissions based on the data inputs specific to their jurisdictions, entrants are entitled to access to unbundled local switching at cost-based rates.

2. The Record Demonstrates That The Inability Of Incumbent LECs To Provide Commercially Reasonable Hot Cuts Impairs Competitive Carriers Seeking To Self-Deploy Switching.

Apart from the economic impairments discussed above, of which hot cuts costs are only a part, it remains true that the problems associated with hot cuts constitute a unique requirement that competitors alone face in attempting to use their own switches. Because of the incumbent LECs’ current closed network architecture, manual work is always required to sever the hardwired connection of the customer’s loop to the incumbent LEC’s main distribution frame and to reconnect the loop to the competitor’s network. For voice-grade loops, the only method that incumbent LECs use to accomplish this task is the “hot cut” process. The record here demonstrates that the hot cut process requires a physical re-wiring of the hardwired connection for each voice-grade loop that must be connected to a competitive switch. That makes the hot cut process an inherently low-volume and manually intensive migration process that is expensive and can result in service disruptions, particularly if the manual processes are stressed by the substantial activity that would result if there were a reasonably competitive market for residential and small business customers. Even though the Commission previously found that hot cuts were successfully performed in some circumstances, those findings were based on small volumes. There is no market-tested evidence that an incumbent LEC can perform hot cuts at the volumes or at the cost and level of quality required if competitive carriers were denied unbundled access to local switching for residential and small business customers. Thus, the quality issues arising from the hot cut process can constitute a material impairment and the incumbent’s ability to perform hot cuts must be reviewed and tested before any decision to remove local switching as an unbundled network element.

The impairment associated with hot cuts originates directly from the incumbent LECs’ historic advantage as the monopoly providers of local exchange services. The incumbent LECs’ networks were designed for use in a single carrier, non-competitive environment and, as a result, the incumbent LEC connection between most voice-grade loops and the incumbent LEC switch consists of a pair of wires that is generally only a few feet long and hardwired to the incumbent LEC switch. Accordingly, if a customer’s service needs to be activated or disconnected, the activity required for the incumbent is simply a software change. In sharp contrast, a competitive carrier must incur the specific impairments – both economic and operational -- associated with hot cuts for every customer served from its own switch. The need for hot cuts strongly

¹⁷ See 1/8/03 WorldCom Ex Parte, Att A at 7-8.1/27/03 WorldCom Ex Parte at 5-6; 1/17/03 AT&T Ex Parte, Att. 2.

reinforces the conclusion above that competitive carriers cannot practically use their own switches to compete for any customer location that is served by copper or copper-hybrid loops, which comprise the vast majority of all customer locations.

Specifically, in addition to the cost factors described above, hot cuts and related loop transfer issues can create three distinct and material impairments for competitive carriers seeking to use their own switches in conjunction with voice-grade loops.¹⁸ First, hot cuts are a manual process that cannot be performed in sufficient volumes to support full-blown mass-market competition. Second, hot cuts frequently lead to provisioning delays and service outages, which mass-market customers refuse to tolerate. Third, competitive carriers cannot practically obtain access to Integrated Digital Loop Carrier (IDLC) loops at all, which constitute a growing percentage of all loops.

Inherent Limits On Hot Cut Volumes. The evidence submitted both by competitive carriers and by State commissions demonstrates that hot cuts cannot be performed in the volumes needed to support mass-market competition. Competitive carriers have shown that, although they have used hot cuts to serve certain small segments of the market, no competitive carrier relies on hot cuts to offer service to significant numbers of customers served by voice-grade loops. Thus, hot cuts are one of the principal factors limiting competitive carriers' ability to provide service to this large market. For example, AT&T presented evidence that, despite years of effort to serve low-volume business locations with a "UNE-Loop" (or "UNE-L") strategy that relied on hot cuts, hot cuts could not be provided in the volumes required to support AT&T's customer demand, leading to massive cancellations of orders for AT&T's competitive service offerings (not only for new local service, but also for the long distance services AT&T had previously provided).¹⁹ Other competitive carriers with experience in using hot cuts offered similar testimony explaining the volume limitations on hot cuts.²⁰ In particular, Z-Tel's witness, who was previously a staff member at the New York PSC assigned to monitoring Verizon's hot cut performance from 1998 to 2000, testified that, even for incumbent LECs with hot cut processes that are "as effective as any incumbent LEC's in the country," there are "inherent limitations of the manual 'hot cut' process" that make it unable "to support commercial volumes sufficient to support mass-market competition."²¹

¹⁸ See, e.g., AT&T at 212, 214-17; New York at 2-4; BTI at 11; UNE-P Coalition at 49-50; WorldCom at 86-87; Z-Tel at 38-47.

¹⁹ See AT&T at 219-20 & Brenner Dec. ¶¶ 39-42.

²⁰ See e.g., UNE-P Coalition at 47-48; AT&T at 214-17; GCI at 8, 34-35, Z-Tel at 47

²¹ Z-Tel, Rubino Dec. ¶¶ 5-6; see *id.* ¶¶ 22, 32, 41. See also, e.g., GCI at 5. GCI, a carrier operating only in Alaska, attempted to rely in part on hot cuts, but it claimed that it has had "continual problems with [the ILEC's] provisioning [of] unbundled loops, especially for business loops, which require a 'hot cut.'" *Id.* at 8. These problems so adversely affected its business plans that GCI determined that it would "pa[y] the costs" for the ILEC "to hire 25 additional workers to increase 'hot-cut' volume," which "cost GCI over \$3 million per year." *Id.* at 34, Hitz Dec. ¶ 14.

This evidence is also corroborated by the comments of State commissions, most notably by the New York PSC (“NYPSC”), which is one of the state commissions with longstanding experience in overseeing hot cut performance.²² Based on its experiences since the *UNE Remand Order* and Verizon’s section 271 approval, the NYPSC’s comments amply explain why hot cuts cannot support mass-market competition:

[T]he hot cut process is labor intensive and involves extensive coordination between [the incumbent LEC] and the CLECs. . . . [In New York,] Verizon provisioned an average of approximately 205,000 orders per month via UNE-P in years 2000 and 2001. . . . Verizon performed approximately 56,000 hot cut orders in 2001 or an average of 4,700 hot-cut orders per month. Verizon would need to dramatically increase the number of hot-cut orders per month if UNE-P was terminated and CLEC customers were switched. In fact, if all 205,000 UNE-P orders were to become . . . UNE-L orders, *Verizon’s hot-cut performance would have to improve approximately 4400 percent*. Such an improvement would be unlikely absent major changes to streamline the hot-cut process.²³

Indeed, because the hot cut process could not support mass-market competition, New York is examining ways to “migrat[e] large volumes of customers from Verizon’s switches to CLECs’ switches more efficiently.”²⁴

The Commission should squarely reject the incumbent LECs’ response that hot cuts cannot be an impairment under section 251 in light of the Commission’s findings in section 271 proceedings that BOCs are performing hot cuts in compliance with the competitive checklist.²⁵ As shown by the New York PSC and other commenters, the number of hot cuts performed by BOCs in connection with the section 271 process is not at all comparable to the number that incumbent LECs would need to perform if unbundled switching were not available for all customer locations served with voice-grade loops.²⁶ In the states where section 271

²² See *BA-NY 271 Order* ¶¶ 7-13, 292-95.

²³ New York at 4 (emphasis added).

²⁴ *Id.* at 3

²⁵ See, e.g., Verizon at 101-02; SBC at 76.

²⁶ See, e.g., New York at 4. In this regard, the New York PSC recently issued an order confirming that although the New York hot cut process is “working” and is “well refined . . . at least at current volumes,” “an efficient bulk hot-cut process and rate is critical to the development of facilities-based competition,” and thus instituted a proceeding to address that problem. Order Instituting Proceeding, *Proceeding on Motion of the Commission to Examine The Process, and Related Costs of Performing Loop Migrations on a More Streamlined (e.g., Bulk) Basis*, Case 02-C-1425 (NYPSC, Nov. 22, 2002) (“*Bulk Migrations Order*”) at 4. Thus, an ILEC that currently performs hot cuts at an acceptable (or even exemplary) level cannot be relied upon to perform hot cuts on the much larger volumes needed if unbundled switching were not available at all. Indeed, the Commission has have recognized from early on that *automated* operational support is the only kind of support that will foster full and effective competition.

(continued . . .)

authorization has been granted, unbundled switching has been available and, accordingly, the BOCs' hot cut performance has generally been limited to certain market segments. For these reasons, the Commission's prior findings in section 271 orders do not support a finding here that competitive carriers would not be impaired if they were required to rely on the hot cut process to serve all mass-market customers.

Customers Will Not Accept The Service Delays And Outages That Accompany Hot Cuts. The delays and outages associated with hot cuts can significantly impair a competitive carrier's ability to compete, because customers will not accept the poor service quality associated with hot cuts.²⁷ For example, AT&T provided testimony reporting on its effort to serve low volume customer locations using the hot cut process to connect voice-grade loops to AT&T's own switches.²⁸ Because of provisioning problems, AT&T's "UNE-L" entry plans were unsuccessful in the marketplace, and over half of AT&T's orders were cancelled prior to conversion.²⁹ As this testimony and other voluminous evidence submitted by competitive carriers demonstrates, the significant quality impairment that results when they attempt to serve low volume customer locations by relying on hot cuts can materially affect their ability to win and retain customers.³⁰

These customer-affecting problems are precisely the type of impairment that can be directly linked to the natural monopoly characteristics of the local exchange and, for that reason, constitute an entry barrier faced uniquely by competitive carriers. Hot cuts are unique to local service markets. The manual work needed to move an incumbent LEC customer's loop in order to connect it to a competitor's switch is not a "universal characteristi[c]" that "any new entrant i[n] virtually any business" must face. See *USTA*, 290 F.3d at 427.³¹ Rather, it is a problem

(. . . continued)

See, e.g., *Michigan 271 Order* ¶ 172; *South Carolina 271 Order* ¶ 107; *Second Louisiana 271 Order* ¶ 96.

²⁷ See, e.g., *Z-Tel* at 32 ("residential consumers and small businesses generally do not have the time, inclination, or ability to fix, tolerate, or address service or billing problems Accordingly, one glitch or delay in the cut-over process for a mass-market customer may be sufficient to convince the customer to go back to the incumbent"); see also *Navigator* at 4; *GCI* at 24; *Hitz Dec.* ¶¶ 14-15 (claiming that, because of service quality problems resulting from hot cuts, GCI "ultimately resorted to holding a monthly drawing for a free trip to Hawaii for all its customers" waiting for service because of hot cut provisioning delays).

²⁸ See, e.g., *AT&T* at 219-20 & *Brenner Dec.* ¶¶ 34-42.

²⁹ *AT&T* at 219 & *Brenner Dec.* ¶ 40.

³⁰ *AT&T* at 218-20; *Z-Tel* at 47 (service disruptions "fundamentally influence customer perceptions of CLECs' ability to provide quality service, and thus CLECs' ability to attract customers"); *UNE-P Coalition* at 49-50; *Navigator* at 4 ("If a Navigator customer (or potential customer) is denied service, or if their service is delayed, or doesn't work" then regardless of cause, "Navigator loses the customer . . . [and along with] the entire competitive community[] also gets the black eye").

³¹ The incumbent LECs' claim that performance problems associated with hot cuts are often caused by CLECs, and not incumbents (e.g., *12/23/02 Verizon Ex Parte* at 4), misses the point.
(continued . . .)

unique to the particular market under examination and arises specifically from the manner in which the incumbent LECs, acting as monopolists, configured their networks to offer service as sole-source providers.

Incumbent LECs assert that quality problems associated with hot cuts can be minimized if cutover are done on a “bulk” basis, such that the timing of the cutovers is “negotiated” and “project-managed,”³² and competitive carriers have in fact provided evidence that the cutover process can be more reliable and efficient if performed on a project-managed basis.³³ However, this fact does not materially alter the impairment analysis, because nothing in the record demonstrates that project-managed cutovers can be utilized to acquire customers served by voice-grade loops in the absence of unbundled switching. To the contrary, the carriers that have used project-managed cutovers have used them only for certain segments of the market, specifically business customers, and only after acquiring the customer through a means that offered the use of incumbent LEC loops and switches in combination.³⁴ And though not as volume-limited as the current hot cut processes, the project-managed approach is not currently robust or widespread enough to be considered viable for the mass market. Further, the characteristics of the full mass market appear ill suited to project-managed cutovers. In the mass market, carriers do not know very far in advance the locations of their customers and the facilities used to serve them. For project-managed cutovers to succeed, it is critical that such information be known well in advance. The unproven nature of project-managed cutovers is also borne out by the recent proceeding instituted by the NYPSC to investigate methods of accomplishing such bulk migrations.³⁵ Accordingly, the record does not support the claims that hot cut service quality issues can be effectively eliminated for the customer locations at issue through the use of project-managed cutovers.

Competitive Carriers Cannot Obtain Access To IDLC Loops. Finally, hot cuts are practically infeasible in an increasing number of cases that leave requesting carriers with no workable means of obtaining access to unbundled loops at all. Incumbent LECs are converting more and more loops to integrated DLC (“IDLC”) technology. Requesting carriers cannot practically access IDLC loops, because in such cases the traffic from many loops are aggregated on the IDLC feeder facility and are not disaggregated before the facility terminates on the incumbent LEC’s switch. The alternatives available to disaggregate the traffic on an individual loop result in an inferior level of service to the customer.³⁶ Under one alternative, the incumbent

(. . . continued)

Service quality problems can be expected by *all* carriers involved, because each hot cut is the result of a complicated, manually intensive process. And, because of the nature of the incumbents’ monopoly network architecture, only the CLECs and their customers are necessarily subject to the errors, however caused, inherent in the manual hot cut process.

³² *E.g.*, 12/23/03 Verizon Ex Parte at 2, 5-6.

³³ *See, e.g.*, AT&T at 208, 221.

³⁴ *See* AT&T, Brenner Dec. ¶¶ 45-55; 1/15/03 Broadview Ex Parte at 6.

³⁵ *See Bulk Migrations Order* at ¶¶ 4-5.

³⁶ *See* AT&T at 213 & Gerszberg Dec. ¶¶ 14-16.

LEC can transfer the loop to “spare” copper (if it is available and suitable for service), and then the hot cut procedure can be used to transfer the loop to the requesting carrier’s switch. This procedure, is costly, time-consuming and hinges on access to the copper facility that would typically have been replaced by fiber-fed IDLC. The second alternative, if spare copper is not available, is to “de-multiplex” all of the traffic on the DLC feeder to a voice-grade interface, and then send the traffic over a facility that, through the hot cut process, allows the loop to be terminated to the competitive carrier switch – a process that is extraordinarily expensive and prone to error and results in degraded data rates for customers transferred to such arrangements.³⁷ Moreover there is evidence that the number of IDLC loops in incumbent LEC networks has increased and done so at an increasing rate.

In short, requesting carriers have no practical means of connecting IDLC loops to their own switches. This IDLC-related impairment flows directly from the closed architecture that is only supportable in a monopoly environment. The only practical means to bring competitive services to any customer served via IDLC loops is by allowing such loops to be obtained in combination with unbundled switching. The record amply supports these conclusions.³⁸

Loop Equal Access. The impairments associated with connecting unbundled voice-grade loops to competitive carrier-deployed switching will continue until measures are implemented to allow such loops to be migrated to competitive carriers’ switches via an electronic and automated process, similar to the so-called PIC process that is used to switch customers from one long distance carrier to another.³⁹

If implemented, electronic provisioning – i.e. loop equal access -- would deploy equipment that converts all of a customer’s telecommunications services, both data and voice, into packets of data. Although electronic provisioning would require changes to current equipment in three areas, it would not require customers to make any changes to their existing CPE nor the existing copper distribution loop plant.⁴⁰ First, the incumbent LEC’s outside loop plant would be modified to deploy specific types of next generation digital loop carriers that are equipped to packetize both the data and voice communications over customers’ existing copper distribution facilities.⁴¹ The packetized traffic would be sent over a single fiber facility to the ILEC central office. Second, at the central office, the packetized traffic would be terminated on

³⁷ See *id.*

³⁸ For example, GCI explains that where the incumbent LEC has deployed IDLC architecture it “simply cannot obtain access to the unbundled UNE loop in order to interconnect and direct that traffic to its collocation space.” GCI at 9, 49-50; see also Z-Tel, Rubino Dec. ¶ 12 n.2.

³⁹ See AT&T at 235; see also Notice ¶ 59 (requesting comment on “whether incumbents that adopt a mechanized method of transferring loops to a competitive carrier’s switch should be excused from the obligation to provide unbundled switching”). AT&T, supported by other competitive carriers, has proposed a specific method, called “ELP” (for “electronic loop provisioning”). AT&T at 235; see generally, *id.*, Gerszberg Dec.

⁴⁰ AT&T at 235.

⁴¹ *Id.*; Gerszberg Dec. ¶¶ 22-24

an ATM module, to which all carriers (including the incumbent LEC) would connect in order to access the packetized traffic.⁴² Third, each carrier (including the incumbent LEC) electing to provide circuit switched voice services would deploy a Voice over ATM (VoATM) gateway that would allow the packetized voice traffic to be sent over existing circuit switched networks.⁴³ Implementation of loop equal access would bring an end to the incumbents' closed network architecture and would allow customers to migrate easily among local carriers. Further, properly designed and implemented loop equal access should also address many of the cost and quality problems associated with pursuing a UNE-L based entry strategy. Finally, adoption of an electronic loop provisioning-based infrastructure would result in a general network upgrade that makes it easier and less expensive for incumbents to provide broadband functionality to more customers.

The process of implementing loop equal access would be similar to the process of implementing equal access for long distance carriers in the 1980s.⁴⁴ There is little doubt that competition in the long distance industry is more robust because of the low cost and ease with which end users may change long distance providers. In fact, the BOCs have taken advantage of that process as they have entered long distance, and they have been very successful in winning long distance customers.⁴⁵

Nevertheless, electronic provisioning has not yet been deployed in the marketplace.. Because a mechanized or automated method of transferring loops among all local carriers' switches could provide enormous pro-competitive benefits to the industry, state commissions have already opened dockets to examine similar issues. The Commission should support such efforts and, if appropriate, initiate its own proceeding to determine the most efficient way of achieving automated methods of loop provisioning.

B. Factually Intensive Impairment Determinations Should Be Made By The State Commissions Subject To Criteria Established By The Commission.

General Analysis. Based on the foregoing, except for broad parameters, any granular review of whether competitive carriers are impaired without access to unbundled switching must depend on a number of a number of location-specific factors and carrier-specific conditions that should be reviewed by State commissions. The studies discussed above, which seek to quantify the extra costs that competitive carriers would incur if they were required to self-deploy their own switches, indicate that the amount of additional costs they must incur will vary depending

⁴² *Id.* ¶¶ 25-28.

⁴³ *Id.* ¶¶ 29-31.

⁴⁴ AT&T at 236-37 & Att. G.

⁴⁵ See, e.g., News Release, "Verizon Communications Reports Strong Yearly Operational Growth and Gives Outlook for 2003," released January 29, 2003 (Verizon is now the third largest long distance carrier in the nation, and has 35% market share in New York and Massachusetts).

on the location and market success at that location.⁴⁶ Similarly, incumbent LECs' ability to perform hot cuts at sufficient levels of quality and in the necessary quantities will likely vary both by the type of local loop involved and by location.

For these reasons, the record permits the Commission to specify the criteria that should be used to establish the existence of impairment, and that the "granular" application of those criteria should be made by the State commissions after a thorough review of the relevant factors, which are set forth in detail below.⁴⁷ In certain cases, the evidence is sufficiently strong as to the likelihood of impairment that it makes sense to establish certain limited presumptions as to whether impairment exists.

Specifically, for customers in the most dense loop zone used to set TELRIC rates, it is appropriate to establish a rebuttable presumption that competitors sustain no material impairment with regard to customers that are served using loops at the DS1 level and above. Such a presumption is appropriate in light of the fact that hot cuts are not required to serve customers with loops with DS1 or more capacity and that the traffic carried over such loops is typically digitized at the customer premises. Accordingly, competitive carriers neither incur the costs of hot cut nor experience the quality degradation associated with hot cuts. Although this does not eliminate all of the cost disadvantage that competitive carriers may face in using their own switches, the evidence is that the elimination of cutover cost differentials and the lack of need to digitize the transmission substantially reduce the potential cost disparity competitive carriers face for this particular situation.⁴⁸

On the other hand, as discussed above, the cost studies submitted by AT&T, WorldCom and SBC show that competitive carriers are often at a significant cost disadvantage when self-deploying switching to serve residential and small business customers that are not served by DS1 or higher capacity loops. Indeed, the cost studies submitted show the existence of sizeable cost disadvantage over a wide range of input value assumptions.⁴⁹ That said, and in light of *USTA*, the Commission may be reluctant to establish a mandatory requirement that switching be unbundled in all such circumstances. Although all of the record evidence shows that competitive carriers seeking to self-deploy switches would face a cost disadvantage in a large range of circumstances, the relative cost disadvantages determined by the models introduced in this proceeding are dependent upon the precise input values used, both with regard to the individual cost components of the facilities and work needed to bring traffic from an incumbent's central office to the competitive carrier's network (*e.g.*, the costs of hot cuts, collocation and backhaul). The cost disparity may also depend upon whether the customers reside in an urban or rural area, because many of the costs that competitive carriers must incur are fixed and thus decline with the number of lines they serve and also because "backhaul" costs may be reduced as the density of

⁴⁶ See 1/17/03 AT&T Ex Parte, Att. 2; 1/14/03 SBC Ex Parte; 1/8/03 WorldCom Ex Parte.

⁴⁷ See 2/7/03 Indiana Utility Regulatory Commission Ex Parte at 1-4; 2/6/03 NARUC Ex Parte.

⁴⁸ 1/17/03 AT&T Ex Parte at 2.

⁴⁹ 1/17/03 AT&T Ex Parte; 1/14/03 SBC Ex Parte; 1/8/03 WorldCom Ex Parte.

local serving offices increases.⁵⁰ Thus, the overall cost disparity that competitive carriers face will depend both on the appropriate, state-specific input values for the relevant cost components and whether the incumbent local serving office where a competitor accesses customers' loops is located in a relatively dense urban or sparse rural area and the absolute number of voice grade lines that the individual carrier serves within a particular wire center. In this regard, the evidence shows that cost disadvantage that competitive carriers' face may also vary significantly between urban and rural areas.⁵¹

As an alternative to making a finding of "national" impairment in all circumstances, the Commission could instead establish presumptions as to whether switching should be unbundled based on factors that are probative of the cost disparity that competitive carriers are likely to face. These presumption could be rebutted pursuant to a review by the State commission of the relevant factors discussed in greater below. These presumptions are based on the three UNE rate zones that most state commissions have established.⁵²

Specifically, in light of the evidence discussed above, impairment exists when a competitive carrier serves less than a critical mass of customers. Moreover, it is apparent that the smaller the wire center, the less likely that an individual new entrant will win sufficient numbers of customers to achieve a backhaul cost that is not impairing. Accordingly, because the smallest offices are generally found in the loop density zones that have the lowest loops per square mile, at a minimum, impairment should be presumed to exist in the least dense loop zone, typically referred to as Zone 3.⁵³ The Commission may also consider establishing a similar presumption for other offices, particularly where new entrants have yet to accumulate a sufficient customer based, impairment is likely to exist. However, in no case should the Commission permit a State commission "de-list" local switching for requesting carriers that seek to serve customers connected to IDLC loops, because, as described above, the only practical means to bring competitive services to any customer served via IDLC loops is through the use of unbundled switching.

In this regard, there is no merit to SBC's claim that the Commission cannot rely on the density zones established by the State commission to set UNE rates as the basis for the rebuttable

⁵⁰ See, e.g., 1/17/03 AT&T Ex Parte, Att. 2.

⁵¹ 1/17/03 AT&T Ex Parte; 1/14/03 SBC Ex Parte; 1/8/03 WorldCom Ex Parte.

⁵² In the *Local Competition Order*, the Commission mandated that State commissions establish at least three geographically deaveraged rate zones to reflect the fact that the costs of local loops will vary by line density. See 47 C.F.R. § 507(f).

⁵³ Not all State commissions have adopted three UNE rates zones. Accordingly, for State commissions that have set four or five UNE rate zones, for purposes of applying presumptions, the most dense and least dense zones should be considered Zone 1 and Zone 3 respectively and the middle zones should be considered Zone 2. For States with six or seven UNE rates zones, the two highest and lowest density zones should be considered Zone 1 and Zone 3 respectively, and the two (or three) middle zones should be considered Zone 2.

presumptions.⁵⁴ To be sure, the State commissions may have used different methodologies to determine the most appropriate measure of density, but SBC does not deny that the most urban areas of States are classified as Zone 1 and the most rural areas as Zone 3. In fact, SBC does not even allege that any of these different methodologies are unreasonable. Thus, to the extent that the evidence of record shows that the cost disparities competitive carriers face in self-deploying switching are significantly higher when only a small customer base can be addressed – and the evidence in fact shows this to be the case – and given that small offices predominate in more rural localities establishing that competitive carriers are presumptively impaired in the most rural part of states is reasonable.

SBC's argument also fails because the existing State-set density zones are being used only in connection with establishing a rebuttable presumption that competitive carriers are impaired with regard to self-deploying switching to serve the most rural areas. The courts have repeatedly upheld the use of such presumptions by administrative agencies.⁵⁵ Indeed, the courts have stressed that an agency is not required to even “make an evidentiary showing to support its rule” and “require[d] only that the agency articulate a rational basis for its rule.”⁵⁶ Here, the record evidence is clear that competitive carriers often suffer a significant cost disadvantage when seeking to self-deploy switching and that this cost disadvantage is most stark where only a small customer base is addressable, such as occurs in rural areas. This evidence more than establishes the “rational basis” for findings of presumptive impairment.⁵⁷

In its order, the Commission should also establish the processes that should be followed by the State commissions in making the factual determinations necessary to apply the impairment criteria that it will be adopting. As noted, because the actual determination of whether impairment exists in a specific location requires a fact-intensive analysis of the local competitive conditions, the State commissions should be asked to apply, on a non-exclusive basis, the impairment criteria set forth below to the relevant facts applicable to the areas in their jurisdictions. In order to bring certainty to this issue and allow business plans to be formed, the Commission should also establish reasonable time frames to conduct the necessary investigations. Should a State commission fail to act in the time frames listed above, or decline to initiate the necessary hearings, an aggrieved party should be permitted to initiate a proceeding with the Commission, and the Commission should undertake the required analysis on an expedited basis.

⁵⁴ See generally 2/6/03 SBC Ex Parte.

⁵⁵ See, e.g., *NLRB v. Curtin Matheson Scientific, Inc.*, 494 U.S. 775, 779-80 (1990); *Atchison, Topeka & Santa Fe Ry. Co. v. ICC*, 580 F.2d 623, 629 (D.C. Cir. 1978).

⁵⁶ *Chemical Manufacturers Assoc. v. DOT*, 105 F.3d 702, 706 (D.C. Cir. 1997).

⁵⁷ On this record, the Commission would have the discretion to establish a rebuttable presumption of impairment in all density zones. See 1/14/03 SBC Ex Parte, Att. 3; 2/04/03 AT&T Ex Parte at 3. Thus, to the extent that the Commission believes it is appropriate to establish a presumption of impairment in only more rural zones, SBC can hardly be heard to complain.

There is also a need for an orderly transition process, and for that reason, the Commission should reject any argument that it should de-list switching subject to reinstatement after the State commissions undertake their factual reviews. New entrants and consumers would be severely harmed if the Commission allowed the current national list to expire and then called on the State commissions to affirmatively identify and list the locations where switching should be unbundled. The competitive carrier industry, which is already reeling from a spate of bankruptcies, reasonably made business plans and attracted capital based on the existing unbundling rules. Thus, eliminating switching on a flash cut basis would wreak havoc with their business and significantly impair competition. This cost is especially unacceptable, given that the record contains substantial evidence – including cost studies submitted by the incumbent LECs themselves – that competitive carriers suffer significant cost and other impairments when they self-deploy switching in most locations. Nor should the Commission be willing to ignore the fact that such a flash cut could unnecessarily interrupt service for customers on the more than 10 million lines that currently obtain service via the UNE-P.

Critically, these harms could be irreparable. A competitive carrier denied unbundled switching when there is actual impairment is likely not to remain viable because, by definition, the competitive carrier would be at a material cost disadvantage relative to the incumbent without cost-based unbundled access to the switching network element. Further, once a carrier has been forced to exit the market, consumers are much less likely to trust that carrier to provide telecommunications services should it try to re-enter once switching is again unbundled.⁵⁸ For these reasons, the Commission should continue to mandate that switching be made available for loops of all capacity levels, subject to the State commission proceedings that will determine whether, as a factual matter, the impairment criteria established by the Commission are met.

The “at a minimum” language in section 251(d)(2) gives the Commission ample authority to adopt reasonable transition rules in connection with unbundling determinations. The courts have repeatedly affirmed the legality of transition rules to prevent or minimize disruption caused by “flash cut” changes.⁵⁹ Indeed, such measures are “a standard tool of the Commission.”⁶⁰

⁵⁸ In contrast, the only “harms” that would be suffered by the incumbent carriers would be leasing network facilities at fully compensatory rates for a limited duration in instances where there is no “impairment.” The TELRIC rates incumbents receive for the UNEs comprising UNE-P are intended to compensate them for their efficient costs in providing those elements. And to the extent that incumbents believe the current rates do not provide them with appropriate compensation, they have recourse to the State commissions and the federal courts.

⁵⁹ *Southwestern Bell Tel. Co. v. FCC*, 153 F.3d 523, 538 (8th Cir. 1998) (“[T]his temporary transitional arrangement is not an unreasonable solution to the implicit tension between the FCC’s goals of moving toward cost-based rates and protecting universal service.”); *Rural Tel. Coalition v. FCC*, 838 F.2d 1307, 1316 (D.C. Cir. 1988) (“[T]he allocation is a reasonable measure . . . because it is part of a transitional process, and interim solutions may need to consider the past expectations of parties and the unfairness of abruptly shifting policies.”) (internal quotation marks omitted) (citation omitted); *MCI Telecomm. Corp. v. FCC*, 750 F.2d 135, 142 (D.C. Cir. 1984) (“The phase-out helps to avoid undue economic dislocations.”); *National Ass’n of Regulatory Util. Comm’rs v. FCC*, 737 F.2d 1095, 1135 (D.C. Cir. 1984) (continued . . .)

Thus, to the extent that the Commission's analysis would lead it make any substantial changes from current unbundling rules that might threaten economic dislocation and consumer disruption if implemented immediately – as the flash cut elimination of switching certainly would – it should exercise its authority to phase such changes in over a reasonable transition period.

In addition, the Commission should also find that it has authority to establish transition processes because whether competitive carriers can deploy facilities in a *timely* fashion is a key consideration in determining whether there is impairment.⁶¹ Particularly in light of the current conditions in the capital markets,⁶² it is unrealistic to believe that competitive carriers will be able to self-deploy facilities instantaneously, even when they might not be otherwise impaired from a cost perspective. For these reasons, in instances when existing network elements may potentially be eliminated pending a fact-intensive investigation, the Commission should also find that section 251(d)(2) gives it authority to promulgate reasonable transitional rules to protect the public interest by preserving existing unbundling requirements pending the outcome of the investigation and by giving competitive carriers a realistic opportunity to deploy their own facilities.

Specific Criteria To Be Applied By The State Commissions. In conducting the impairment analysis (for loops other than IDLC loops), the State commissions should be asked to undertake a two-step analysis to address the separately defined practical and economic impairments relating to competitive carriers' ability to use their own switches to provide local service.

First, a State commission should review the incumbent LEC's performance with respect to physical loop transfers necessary to redirect end user loops to competitive switches. This review is necessary to assure that customer loops can be transferred from the incumbent LEC main distribution frame to a competitive LEC collocation as promptly and efficiently as incumbent LECs can transfer customers using UNE-P,⁶³ and, therefore, whether competitive

(. . . continued)

("[T]he shift from one type of nondiscriminatory rate structure to another may certainly be accomplished gradually to permit the affected carriers, subscribers and state regulators to adjust to the new pricing system."); *see also* Order on Reconsideration, *Administration of the North American Numbering Plan, Carrier Identification Codes*, 12 FCC Rcd. 17876, ¶20 (1997); Memorandum Opinion and Order on Further Reconsideration, *Amendment of Section 64.702 of the Commission's Rules and Regulations*, 88 F.C.C.2d 512, ¶ 71 (1981).

⁶⁰ *Western Union Tel. Co. v. FCC*, 815 F.2d 1495, 1505 (D.C. Cir. 1987) (citation omitted).

⁶¹ *UNE Remand Order* ¶¶ 89-94. Nothing in *USTA* called into question the Commission's prior holding that timeliness was a factor in determining whether impairment exists.

⁶² *See, e.g.*, AT&T Reply at 8, 106-07, 127-28.

⁶³ Since the de-listing of unbundled switching would force competitors to substitute hot cuts for UNE-P, the performance criteria for UNE-L customers should be the same as those applicable to UNE-P.

carriers are impaired because the quality of their services are below that offered by the incumbent. At a minimum, State commissions should review the following factors:

- A. The ability to meet loop transfer performance measurements for timeliness within the same period currently applicable to automated customer migrations to UNE-P (typically within 2 business days), as well as performance measures for accuracy and completeness of such transfers of at least 99%;
- B. The ability to transfer sufficient customers to support a fully competitive market (minimum of 3-5% of the total affected customer base per month);
- C. Third party testing that demonstrates the incumbent LEC's ability to perform at the above levels; and
- D. A determination by the State commission that it has in place effective measures to monitor incumbent LEC loop transfer performance and to impose meaningful consequences in the event that the incumbent LEC's performance falls below the required levels, including the right to re-impose the requirement to provide unbundled local switching as a UNE (and thus UNE-P).

Second, the State commission should review the additional costs a competitive carrier faces to use its own switch to provide service as compared to the incumbent LEC's cost of using its own switch in order to determine whether those costs are a material cost disadvantage that is likely to preclude local entry absent the availability of unbundled switching.⁶⁴ The State commission review should also seek to determine whether self-deployment of unbundled switching can be done in a timely fashion and the extent to which competitive carriers can serve customers ubiquitously using their own facilities. At a minimum, the following factors should be considered by the State commissions:

- A. Incumbent LEC loop transfer charges
- B. Competitive carrier loop transfer costs
- C. Collocation costs, including
 - 1. Non-recurring costs;
 - 2. Power and related costs;
 - 3. Recurring space charges; and

⁶⁴ In reviewing such costs, the State commission should be permitted to establish a threshold for the LSOs to be considered for relief from the unbundling obligations.

4. Equipment costs for equipment used to digitize, multiplex and concentrate traffic over transferred loops.
- D. Backhaul costs to transport traffic to the competitive carrier switch, including
 1. Direct backhaul from an “on-net” collocation to a competitive carrier switching location; and
 2. Indirect backhaul from an “off-net” collocation to a competitive carrier’s on-net node.
 - E. Any other factors that affect competitive carriers’ costs compared to the incumbent’s costs of using its own switching to provide retail service to end users.
 - F. The extent to which a competitive carrier is able to offer ubiquitous service in competition with the incumbent LEC, and the potential impact of a requirement that a competitive carrier compete throughout a broad geographic territory using UNE-L, including the difficulty any competitive carrier may have in raising the capital needed to deploy the necessary facilities.⁶⁵

Finally, State commissions should establish other appropriate transitional and related requirements for the availability of local switching as an unbundled network element at TELRIC-based rates if it determines that the impairment criteria are no longer met. Specifically, the States should review and/or establish the following:

- A. EELs Availability – The State commission must assure that loop-transport combinations (“EELs”) are available, free of use and commingling limitations, to enable a competitive carrier to route traffic from loops terminating at off-net collocations to its own local transport facilities.
- B. Transition Provisions – The State commission must also adopt a reasonable transition process and schedule that enables carriers that will lose access to unbundled local switching as a UNE, so that they can continue to use unbundled local switching (and UNE-P) at cost-based rates in the following circumstances:
 1. Until they can construct their own facilities, including a transition period of at least 15 months for UNE-P arrangements established prior to the activation of a facilities-based collocation and

⁶⁵ In this regard, incumbent LECs seeking to enter the long distance marketplace are able, through the purchase of wholesale long distance services (at rates that approximate the kinds of discounts that are only available to competitive carriers through UNE-P today), to compete on a ubiquitous basis with no investment in new long distance facilities.

2. As a customer acquisition tool, subject to future transitioning to a UNE-L architecture. In this connection, State commissions must establish a minimum number of UNE-P lines that a competitive carrier may maintain as UNE-P lines in an individual LSO even after transitioning to UNE-L, in an amount not less than 400 lines and not including IDLC loops. Such amount should be subject to adjustment if the ILEC is unable to transfer UNE-P customers to a UNE-L loop architecture in a timely manner.
3. The transition period may be extended if a CLEC demonstrates that it or the incumbent LEC cannot reasonably implement the necessary arrangements (*e.g.*, collocation) to enable the CLEC to serve customers using its own switch within the allotted time.⁶⁶

C. Incumbent LEC Arguments Regarding Competitive Switch Deployment And Lines Served Are Misleading And Should Be Rejected.

The incumbent LECs argue that the Commission should remove virtually all unbundling obligations regarding local switching on a national basis simply because competitive carriers have deployed some switches and are serving some lines, including some residential subscribers, with those switches.⁶⁷ The Commission should reject the claim that switch deployment by itself, or a simple counting of lines served, demonstrates a lack of impairment if incumbent LEC switching were not unbundled. To be sure, switch deployment and line counts may have some relevance evidence as to whether competitive carriers would be impaired absent access to unbundled switching. However, these line and switch counts are not conclusive evidence that competitive carriers would not be impaired in all circumstances without access to unbundled switching. Rather, the evidence presented by the competitive carriers shows that, even where cost-based loop-transport combinations have been available, they have been able to use their own switches only to serve a limited market segment, specifically, high-volume customer locations in densely populated areas that have significant demand for local services and that have deployed sophisticated customer premises equipment so that the customer accesses the competitive carrier network with loops having capacities of a DS-1 or higher.

This squarely meets the standard set forth in *USTA*. Although the court found that the Commission should explain why an element should be unbundled even though it has been “deployed on a competitive basis,”⁶⁸ the court’s decision does not limit the Commission’s unbundling inquiry only to evidence of competitors’ ability to deploy a certain element. To the

⁶⁶ To eliminate confusion, the Commission should in its order clarify that its new rules supersede the Commission’s previous “three-line” rule, which governed when incumbent LECs were required to provide unbundled access to switching. *See UNE Remand Order* ¶¶ 276-98.

⁶⁷ *See, e.g.*, *BellSouth* at 77-90; *Qwest* at 20-31; *Verizon* at 94-105; *UNE Report*, Section II. *See also* 1/30/03 *Qwest Ex Parte* (suggesting delisting of local switching in any LATA where competitive carriers have deployed three or more local exchange voice switches).

⁶⁸ *USTA*, 290 F.3d at 422.

contrary, the court also made clear that the Commission should also examine the impact of unbundling on “specific markets or market categories.”⁶⁹ Thus, where, as here, that an element is deployed, but cannot in fact be *used* to serve a particular market category then the *USTA* court’s analysis fully supports unbundling the element to serve the identified “customer class.”

The parties dispute the precise number of competitive carrier switches deployed, the geographic reach of those switches, and the number of lines served by competitive carriers with those switches. Nevertheless, there is generally no dispute that competitive carriers have increased their switch deployment and the number of lines they have served since 1999. However, the evidence shows that use of competitive switches to serve small customer locations is minimal.

With respect to the number of switches deployed by competitive carriers, the incumbent LECs claim that competitive carriers have deployed over 1,300 switches, including 600 since 1999. Although the number of switches deployed by competitive carriers is rising, the incumbent LECs’ count of competitive carrier switches is inflated. In particular, the incumbent LECs’ switch count includes many switches that were deployed to serve particular non-local market segments. For example, as AT&T explained, the incumbent LECs included many long distance switches that cannot be engineered to provide service to customers that do not have a sophisticated CPE and that use high-capacity loops.⁷⁰ Because of these technical limitations, the deployment of these switches does not support the incumbent LECs’ claims that competitive carriers could use them to provide local services to mass-market customers. In fact, it reinforces the evidence that competitive carriers are able to use switches only to serve high-demand customer locations.

With respect to the number of lines served by competitive carriers, the incumbent LECs estimate that competitive carriers are serving between 16 and 23 million lines using their own switches, and that 3 million of this total consist of residential lines.⁷¹ As with the switch count, the record demonstrates that the methodology used by the incumbent LECs in deriving these figures is flawed. The incumbent LECs derive their estimate of lines provided over competitive carrier switches from two sources: information derived from E911 databases and estimates derived from interconnection trunks.⁷² Neither of these sources is a reliable mechanism to estimate the number of lines provided over competitive carriers’ switches.⁷³

Nevertheless, since 1999, there has been an increase in the number of competitive carrier switches and the number of competitive carrier lines served with those switches. However, based on the record evidence, these switches are *not* being used to serve customer locations with

⁶⁹ *Id.* at 426.

⁷⁰ See AT&T, Brenner Dec. ¶ 28.

⁷¹ SBC at 69-70; Verizon at 96; Qwest at 22 & n.41.

⁷² See ILEC Report at A-2, A-3.

⁷³ See AT&T Reply, Pfau Reply Dec. ¶¶ 23-31; AT&T Reply, Lancaster-Morgenstern Reply Dec. ¶¶ 8-16.

voice-grade loops, precisely because of the impairments described above. Rather, the evidence shows that these switches are being used primarily to serve large business customers that use high-capacity loops, which can be connected to competitive carrier switches with few of the impairments that affect voice-grade loops.⁷⁴

In particular, data compiled by a coalition of competitive carriers examined competitive carriers' operations in six representative markets, and found that about 90 percent of the loops used by competitive carriers in these markets are DS-1 capacity or higher.⁷⁵ The study found that, of the 1.7 million voice-grade equivalents served by competitive carriers, only 10 percent, or 180,000, were voice-grade loops.⁷⁶ The data collected by this competitive carrier coalition demonstrates that competitive carriers are deploying switches to serve high volume customer locations that require DS-1 or higher loop connectivity, and the evidence submitted by individual carriers reinforces these findings. For example, AT&T explains that it has deployed more than one hundred switches in local markets, but that it nonetheless serves only a very small percentage of voice-grade loops using those switches. Since 1999, AT&T has continued to deploy local switches at a modest rate, but its testimony shows that it uses those switches almost entirely to provide services to large businesses with intense demand for telecommunications services.⁷⁷ The incumbent LECs' estimates of lines served by competitive carrier switches do

⁷⁴ In cases where the customer deploys a PBX or the competitive carrier otherwise deploys premises equipment that digitizes and multiplexes multiple voice grade loops onto a single loop, the competitor's otherwise substantial backhaul cost disadvantages for voice grade loops can largely be offset by eliminating the need for an uneconomic purchase of voice grade loops from the incumbent. Such cost reductions may be sufficient to largely offset the backhaul disadvantage that exists for the competitor, especially for high capacity loops. In part, the digitization equipment at the customer premises eliminates the need for digitization and multiplexing equipment in collocation while it also reduces the overall collocation space that would be required if the customer were served using voice grade loops. In addition, installation of all such higher capacity services requires special work, unlike the situation applicable to hot cuts and voice grade loops. Thus, the competitor's impairment when using switching to provide service to customers served by a DS1 or greater bandwidth loop is reduced, especially if such transport is available to the requesting carrier at a TELRIC rate.

⁷⁵ See CCG Consulting, Inc., "State of CLEC Competition," Table 4 ("CLEC Coalition Report").

⁷⁶ *Id.* Significantly, the only market which diverged significantly from this collective pattern was Albany, New York – where UNE-P has practically been available to CLECs to serve many customer locations that require voice-grade loops. *Id.* In Albany, about 60 percent of the VGEs that CLECs serve are voice-grade lines, *id.*, which demonstrates that UNE-P provides the most currently viable mechanism for CLECs to access customers served by voice-grade loops. Notably, CLECs have deployed switches in these markets, but they are not using them to serve voice-grade loops. In Chicago, for example, CLECs in the coalition reported deploying 15 switches, yet they served only about 80,000 voice-grade loops with those switches – less than 10 percent of their total VGEs. *Id.* p. 2, Table 4.

⁷⁷ AT&T at 207-09, 219 & Brenner Dec. ¶¶ 24-29; *see also* Z-Tel at 48-50 ("The fact that some CLECs have deployed switches to serve the large business market or broadband market does not
(continued . . .)

not contradict the competitive carriers' specific showings of impairment, which prevents competitive carriers from serving low volume customer locations with their own switches. For these reasons, the switch count data offered by the incumbent LECs is not a valid indication of competitive carriers' ability to *use* those switches to serve the mass market generally.⁷⁸

The incumbent LECs also claim that competitive carriers serve approximately 3 million residential customers using their own switches. This figure is inflated. One significant reason is that most of the residential customers (2.5 million) receiving switch-based local service are cable telephony subscribers.⁷⁹ Further, no non-cable competitive carrier commenter claims that it provides significant amounts of residential switch-based service.⁸⁰ Thus, even if the incumbent LECs are correct that competitive carriers serve 3 million residential lines with their own switches, when the 2.5 million customers served by cable are subtracted, no more than 500,000 – or about 0.5% of all the residential lines in the country – are served competitors using their switches in combination with voice grade loops. Those data thus reinforce the view that competitive carriers are generally not able to use their own switches to serve locations with voice-grade loops.

(. . . continued)

support the conclusion that CLECs are not impaired without access to unbundled switching to serve the mass market"); *see also* CompTel at 62-63.

⁷⁸ In fact, the evidence in the record here shows that CLECs would be deploying even more switches if they could effectively use them to serve the mass market. As Z-Tel explains, it had the opportunity to purchase an already-deployed switch at what it called a bargain price of about a fifth of the ordinary cost. Z-Tel at 34. After examining the business case, however, Z-Tel concluded that it would not purchase the switch (and even that it would not accept it for free) because the impairments described above meant that it could not practically use the switch to provide service to the mass-market customers that Z-Tel largely serves. *Id.* at 35-36.

⁷⁹ The incumbent LECs themselves concede this figure includes 1.5 million cable lines, which lowers by half the purported number of lines that other competitive carriers provide to residences. In fact, the number of lines served by cable operators is likely much greater than 1.5 million, and is probably comes close to capturing virtually of the purported residential subscribers receiving switch-based service from competitive carriers. *See* AT&T Reply, Pfau Reply Dec. ¶¶ 30-31.

⁸⁰ *See* AT&T Reply, Pfau Reply Dec. ¶¶ 30-31. To the extent that any CLECs do provide such service, it is most likely to MDUs, which usually can be served using high-capacity facilities that avoid the impairments associated with individual low-volume customer locations. *Id.*, Pfau Reply Dec. ¶ 31.